IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant:	Willem Roux
Title:	Method and System for Distinguishing Effects Due to Bifurcation from Effects Due to Design Variable Changes in Finite Element Analysis
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDED APPEAL BRIEF

This amended appeal brief is submitted in response to the Notification of Non-Compliant Appeal Brief dated Feb. 13, 2008. Non-compliant sections (i.e., claims appendix, evidence appendix and related proceedings appendix) are resubmitted with this paper.

No fee is believed to be required for filing this amended appeal brief, if it is determined that a fee is due in connection with this paper, the Commissioner is hereby authorized to charge payment of any fees associated with this communication or to credit any overpayment, to Deposit Account No. 503308.

Respectfully submitted,

I hereby certify that this correspondence is being transmitted to the Commissioner for Patents via the Office electronic filing system on the date stated below.

Date: Feb. 14, 2008

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VIII. CLAIMS APPENDIX

1. (Previously presented) A method for distinguishing effects due to bifurcation from effects due to design variable changes used in a finite element analysis (FEA) for designing a structural product by a user of the FEA, the method comprising:

obtaining in a computing device a plurality of finite element analysis responses for a set of design experiments, wherein each of the set of design experiments has a specific combination of design variables values;

constructing a metamodel from the plurality of finite element analysis responses;

selecting a set of outliers from the set of design experiments whose finite element analysis responses are not predicted by the metamodel;

identifying high likelihood bifurcation region of a FEA model that represents the structural product by plotting an indicating quantity of the finite element analysis responses; and

examining the finite element analysis responses of a couple of the outliers to determine whether the effects are due to the bifurcation or due to the design variable changes, wherein the couple of the outliers is maximum and minimum of the set of outliers.

2. (Canceled)

3. (Original) The method as recited in claim 1, wherein the metamodel is constructed using least squares fitting technique.

4. (Original) The method as recited in claim 1, wherein the metamodel is based on nodal displacement.

5. (Original) The method as recited in claim 1, wherein the metamodel is based on acceleration history.

6. (Previously presented) The method as recited in claim 1, wherein the indicating quantity is chosen from the group consisting of standard deviation and range.

7. (Previously presented) A computer program product including usable medium having computer readable code embodied in the medium for causing an application module to execute on a computer for distinguishing effects due to bifurcation from effects due to design variable changes used in a finite element analysis (FEA) for designing a structural product by a user of the FEA, the computer program product comprising:

program code for obtaining a plurality of finite element analysis responses for a set of design experiments, wherein each of the set of design experiments has a specific combination of design variables values;

program code for constructing a metamodel from the plurality of finite element analysis responses;

program code for selecting a set of outliers from the set of design experiments whose finite element analysis responses are not predicted by the metamodel;

program code for identifying high likelihood bifurcation region of a FEA model that represents the structural product by plotting an indicating quantity of the finite element analysis responses; and

program code for examining the finite element analysis responses of a couple of the outliers to determine whether the effects are due to the bifurcation or due to the design variable changes, wherein the couple of the outliers is maximum and minimum of the set of outliers.

8. (Canceled)

9. (Previously presented) The computer program product as recited in claim 7, wherein the metamodel is constructed using least squares fitting technique.

10. (Previously presented) The computer program product as recited in claim 7, wherein the metamodel is based on nodal displacement.

11. (Previously presented) The computer program product as recited in claim 7, wherein the metamodel is based on acceleration history.

12. (Previously presented) The computer program product as recited in claim 7, wherein the indicating quantity is chosen from the group consisting of standard deviation and range.

13. (Previously presented) A system for distinguishing effects due to bifurcation from effects due to design variable changes used in a finite element analysis (FEA) for designing a structural product by a user of the FEA, the system comprising:

an I/O interface;

a communication interface;

a secondary memory;

a main memory for storing computer readable code for an application module;

at least one processor coupled to the main memory, the secondary memory, the I/O interface, and the communication interface, said at least one processor executing the computer readable code in the main memory to cause the application module to perform operations of:

obtaining a plurality of finite element analysis responses for a set of design experiments, wherein each of the set of design experiments has a specific combination of design variables values;

constructing a metamodel from the plurality of finite element analysis responses;

selecting a set of outliers from the set of design experiments whose finite element analysis responses are not predicted by the metamodel;

identifying high likelihood bifurcation region of a FEA model that represents the structural product by plotting an indicating quantity of the finite element analysis responses; and

examining the finite element analysis responses of a couple of the outliers to determine whether the effects are due to the bifurcation or due to the design variable changes, wherein the couple of the outliers is maximum and minimum of the set of outliers.

14. (Canceled)

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None